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II. SERRATIFOLIA—

D. GROUP UNCINATUS:

D. uncinatus (Hedw.)

E. GROUP EXANNULATUS:

D. Rotae (DeNot).

D. pseudorufescens (Warnst.)

D. fluitans (L.)

D. exannulatus (Guemb.)

The author's interruption in this work, in order to elaborate his local Mossflora, has prevented his going into much greater detail and after spreading out his general plan he describes minutely and discusses the range of forms of only the eight species which appear to occur in his restricted area, viz.: *D. pseudofluitans*; *D. simplicissimus*, with three new varieties; *D. capillifolius*, with five varieties, one new; *D. lycopodioides*; *D. latifolius*; *D. brevifolius*; *D. uncinatus*, with eight varieties, one of them new; *D. subaduncus*.

In a foot note under *D. uncinatus plumulosus* the author considers *Hypnum symmetricum* Ren. & Card., a form of this plumulose variety. No other American forms are referred to. While the author does not complete his task in the sense of his first intention, his treatment of this difficult section of Hypnum, based upon a comprehensive study of all the important Harpidium collections of Europe, commands both respectful attention and interest in the sound common sense judgment shown. And one of these days when from among our own bryologists one shall take up our American Harpidia for a general review, the way pointed out by this author will be of the greatest possible value.

Winona, Minn.

NEW OR UNRECORDED MOSSES OF NORTH AMERICA.

By J. CARDOT AND I. THÉRIOT.

Translated and condensed from The Botanical Gazette, May, 1904.

DESCRIPTIONS OF NEW SPECIES GIVEN IN FULL.

PHASCOM HYALINOTRICHUM Card. & Thér.

Plants small, budlike, solitary or clustered, light green. Leaves imbricated, the lower smaller, the upper larger, median and upper ovate, 0.8–1 mm. long by 0.6 mm. wide, concave, entire or subentire, acuminate, margins plane or slightly reflexed below; costa narrow, 24 μ wide in the middle of the leaf, attenuate below, excurrent into a hairlike flexuous hyaline point, $\frac{1}{3}$ – $\frac{1}{2}$ the length of the leaf. Areolation lax, not papillose not very chlorophyllose, hyaline above, median cells irregular, quadrate, short-rectangular or subhexagonal, 18–30 μ by 12–18 μ , somewhat incrassate, the lower larger and thinner walled, the upper longer, more incrassate. Seta very short, 0.2 mm. long, geniculate; capsule immersed, globose, apiculate, 0.7 mm. in diameter; calyptra cucullate, covering half the capsule. Ripe spores unknown. Plate XVI.

California: Soldiers' Home, Los Angeles Co. (Dr. Hasse, 1902: herb. C. F. Baker).

A quite peculiar species, very distinct by its habit, which recalls that of an Acaulon, its puliform excurrent nerve, and its loose smooth areolation, a little chlorophyllose below and hyaline above.

PLEURIDIUM BAKERI Card. and Thér.

Plants short, loosely caespitose, yellowish green. Stem 2-4 mm. long, erect, simple. Leaves erect, the lower minute, distant, the upper longer, lanceolate-subulate, acute, entire, rarely subdenticulate at apex, subcanaliculate by the inflexed margins, 1.3 by 0.35 mm.; perichaetial leaves twice as long, gradually subulate; costa broad, 80-100 μ , percurrent, somewhat narrower in the perichaetial leaves, lower cells pellucid, subrectangular, 24 μ by 12 μ , median and upper narrower, 29-30 μ by 5 μ , opaque, incrassate. Seta erect, short, 0.4 mm. long; capsule immersed, ovate, somewhat gibbous, obtusely apiculate, smooth, orange when mature, 1 mm. by 0.6 mm. Calyptra cucullate, covering $\frac{1}{3}$ - $\frac{1}{2}$ the capsule. Spores subglobose, minutely papillose, 24-30 μ in diameter. Seemingly dioicous, antheridial buds unknown. Plate XVI.

California: On ground in old pastures, foothills near Stanford University (C. F. Baker, 1902).

VAR. ELONGATUM Card. & Thér.

Differs from the typical form in the longer stems and longer and more flexuous upper leaves.

California: On wet clay soil, foothills near Palo Alto (C. B. Baker, 1902).

Distinguished from *P. subulatum* Br. Eur. by the shorter and less finely subulate leaves, with a broader costa. The later character also separates our species from *P. Bolanderi* C. Muell., which, besides, has the leaves distinctly denticulate on the margins from the middle upward. *P. Ravenelli* Aust., of which we have seen no authentic specimen, according to the description has carinate leaves, excurrent costa, and synoicous inflorescence. If the inflorescence of *P. Bakeri* is, as we think, really dioicous, this character would distinguish it from all the other North American and European species of *Pleuridium*.

DICRANELLA CURVATA Sch. var. MISSOURICA Card. & Thér.

Differs from the type in the less distinctly striate capsule and the broader and shorter leaf cells.

Missouri: Seligman, on ground (B. F. Bush, 1898).

DICRANUM ALATUM (Barnes) Card. & Thér.

Dicranum Bonjeani DeNot. var. *alatum* Barnes.

Illinois: Chicago (Dr. J. Röhl, 1888). Wisconsin: Madison (Cheney and True). W. Minnesota: Cedar Lake, near Montevideo, Chippewa Co. (J. M. Holzinger, 1901).

The nerve bearing on the back two high, serrate lamellæ, and the shorter, thinner-walled cells of the areolation, seem characters of sufficient value to separate this moss from *D. Bonjeani*. Plate XVII.

FISSIDENS BUSHII Card. & Thér.

Fissidens subbasilaris var. *Bushii* Card. & Thér.

Missouri: Eagle Rock, on gravelly ground (B. F. Bush, 1897). Texas: (Elsa Baumann; herb. Dr. Zickendrath).

At first we considered this moss as a variety of *F. subbasilaris* Hedw. but further observations led us to a different conclusion, and now we think it preferable, on account of the monoicous inflorescence and the costa reaching the apex, to place it near *F. taxifolius* Hedw., of which it may be a subspecies, characterized by the nearly twice smaller size, the obtuse abruptly apiculate leaves with the dorsal wing not undulate at base and with smaller cells. From *F. subbasilaris* it is easily distinguished by the inflorescence and the costa reaching the apex. Plate XVII.

FISSIDENS PUSILLUS Wils. var. *BREVIFOLIUS* Card. & Thér.

Differs from the type in the much shorter and more abruptly and shortly acuminate leaves of the sterile innovations.

California: Soldiers' Home, Los Angeles Co. (Dr. Hasse, 1902; herb. C. F. Baker).

POTTIA NEVADENSIS Card. & Thér.

Monoicous? green; caespitose. Stems erect, short, 1-2 mm. long. Leaves erect, ovate, concave, median 1 by 0.6 mm., the lower smaller, all smooth with entire margins somewhat revolute on one side at least. Costa narrow, abruptly excurrent into a subpiliform apex, median cells hexagonal or rhomboidal, not very chlorophyllose, about 18μ by 15μ , the upper somewhat smaller, the basal elongated rectangular 40μ by 18μ , all entirely smooth. Perichaetial leaves much larger and lighter colored, broader, strongly concave, reaching 2 mm. in length. Seta light colored, flexuous, 10-15 mm. long. Capsule 1.5-2 mm. by 0.75 mm., erect, oblong, attenuate at base, truncate at mouth, pale, without peristome. Operculum depressed, long and slenderly beaked, 1.2 mm. long. Columella adhering somewhat. Spores densely papillose, 24-30 μ in diameter. Plate XVIII.

Nevada: Kings Cañon, near Carson, on ground about willow thickets (C. F. Baker, 1902).

This species seems very distinct from any other European or North American Pottia.

DIDYMODON TOPIACEUS Jur. var. *DECURRENS* Card. & Thér.

Similar to var. *elatus*. Leaves remote, recurved when moist, long decurrent, strongly papillose on the back, costa rough.

Texas: Shovel Mt., Burnet Co. (Rev. Franciscus Ebeling; herb. Dr. E. Zickendrath).

DESMATODON BUSHII Card. & Thér.

Plants loosely caespitose, olive-green. Stems erect, 5-15 mm. long simple or divided. Leaves crispate when dry, when moist erect-spreading 1-1.5 mm. by 0.4 mm., oblong-lanceolate, mostly obtuse, costa short-excurrent, mucronate, margins entire, longly revolute, lower cells rectangular, hyaline or somewhat yellowish, 35-40 μ by 9 μ , the rest roundish-quadrate,

strongly papillose, opaque, $7-8\mu$ in diameter. Costa 60μ thick at base. Perichaetial leaves larger, hyaline in the lower $\frac{1}{3}-\frac{1}{2}$, more narrowly acuminate, margins about as much revolute above. Seta pale red, about 10 mm. long. Capsule erect, subcylindric, with operculum about 2 by 0.44 mm., operculum conic, rather short, .05 mm. long. Calyptra covering $\frac{1}{2}$ the capsule. Peristome 0.35 mm. high, purple, basal membrane short, teeth little twisted, divided to the base into two filiform divisions, papillose, divisions usually united below by two or three trabeculae. Spores smooth, variable, globose or elliptic, 20-30 μ in diameter. Seemingly dioicous (antheridial buds unknown). Plate XVII.

Missouri: Courtney, on wet rocks (B. F. Bush, 1898).

Much resembling *Barbula unguiculata* Hedw. by the habit and the shape and areolation of the leaves, but readily distinguished from it by the peculiar structure of the peristome, which is hardly twisted, and by the spores twice larger. C. Mueller describes a *B. cancellata*, the peristome of which according to the description must have a similar structure to that of our *D. Bushii*, but the teeth are smooth (likely twisted) and the lid is as long as the capsule.

DESMATODON SYSTILIOIDES Ren. & Card.

This is not a *Desmatodon* but a new *Pottia* of the group *Heimia*.

BARBULA MACROTRICHA Card. & Thér.

Tufts compact, hoary above. Stems short, 1-2 mm. long. Leaves erect when moist, appressed into a bud-like shape, twisted when dry, 1-1.5 mm., by 0.6-0.8 mm. ovate or short subspatulate, apex broadly obtuse, often emarginate especially in the lower leaves, broken when old, margins entire, plane at base, above this revolute to near the apex. Costa narrow, 4-8 μ thick, excurrent into a smooth hyaline hair which is short in the lower leaves but equalling the rest of the leaf in the upper leaves. Lower leaf cells quadrate or short rectangular, 18 μ broad, hyaline or slightly chlorophyllose, nearly smooth, the other cells smaller, about 12 μ broad, quadrate or subrotund, strongly chlorophyllose and highly papillose, therefore indistinct. Seta reddish at base, above pale, 6-8 mm. long. Capsule erect, subcylindric, somewhat curved, 2.5 mm. long, including the elongated conic operculum. No mature capsules known. Seemingly dioicous as antherial plants were not seen on fruiting plants. Plate XVIII.

California: Soldier's Home, Los Angeles Co. (Dr. Hasse, 1902; herb. C. F. Baker).

In general appearance resembling the smallest forms of *B. muralis* Timm., from which it differs by the smaller size, the short pedicel, the much shorter leaves obtuse or emarginate and finally eroded at the apex, the hair of the upper leaves as long as or even longer than the lamina, etc.

(To be continued.)